

(6 pages)

Reg. No. :

Code No. : 11577 E Sub. Code : JMPB 61

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Sixth Semester

Plant Biology and Plant Biotechnology – Main

PLANT PHYSIOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Osmosis is a process of movement of _____ molecules.
- (a) solute
 - (b) water
 - (c) both (a) and (b)
 - (d) none of these

2. The features that differentiate guard cells from epidermal cells
- (a) chloroplast
 - (b) cell wall thickness
 - (c) shape
 - (d) all of these
3. Which of the following is a macronutrient?
- (a) Copper
 - (b) Boron
 - (c) Calcium
 - (d) Sodium
4. Who proposed theory associated with translocation of organic solutes?
- (a) Malpighi
 - (b) Mason
 - (c) Munch
 - (d) Warner
5. Example for plant which fixes CO₂ in night
- (a) Amaranthus
 - (b) Sugarcane
 - (c) Opuntia
 - (d) Mango
6. When does oxidative phosphorylation occur?
- (a) ribosome
 - (b) mitochondrial membrane
 - (c) cytoplasm
 - (d) Thylakoid



7. Which growth hormone is used as weed killer?
- (a) Auxin (b) Gibberellin
(c) Cytokinin (d) Ethylene
8. Which one of the following pigments is associated with flowering?
- (a) chlorophyll (b) anthocyanin
(c) carotene (d) phytochrome
9. Which activity is induced by the presence of abscisic acid in plants?
- (a) germination
(b) respiration
(c) dormancy
(d) none of these
10. Which one of the following causes biotic stress?
- (a) water
(b) cold
(c) salt
(d) none of these

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) $DPD = OP - TP$ – Discuss.

Or

- (b) Discuss about the merits and demerits of Transpiration.

12. (a) What are the common deficiency symptoms of minerals in plants?

Or

- (b) Briefly explain the experiments conducted to prove that phloem is the tissue for solute transport.

13. (a) Mention about cyclic photophosphorylation and its significance.

Or

- (b) What are the respiratory activities taking place in the cytoplasm of a cell?

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14. (a) Cytokinin is a very important plant growth hormone – How?

Or

- (b) Explain the role of vernalization in flowering.

15. (a) What is seed dormancy? Discuss about its causes.

Or

- (b) Write notes on Frost stress.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the mechanism of water absorption in plants.

Or

- (b) Explain the various theories on stomatal opening and closing.

17. (a) Discuss about the role of any four micronutrients in plant growth.

Or

- (b) With an experiment explain the mechanism of translocation of organic solutes in plants.

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18. (a) Write an essay C_3 cycle.

Or

- (b) What is citric acid cycle? Explain the steps involved in that cycle.

19. (a) Describe the role of Gibberellins in plants.

Or

- (b) Write an account on Photoperiodism.

20. (a) What are the methods employed in breaking the seed dormancy?

Or

- (b) Write notes on :

- (i) salt stress
- (ii) draught stress.

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